Amendment to the Claims

In the Claims:

Please cancel Claims 17 – 30 and amend Claims 1 and 3, as follows:

1. (Currently Amended) A programmable graphics pipeline for processing and rendering variable length multimedia data, wherein different types of multimedia data are divided into partitions of differing lengths, comprising:

(a) an instruction cache for storing at least graphics and media instructions;

(b) a first register file for storing the variable length multimedia data and intermediate data;

(c) a first vector functional unit in communication with the instruction cache and the register file, said vector functional unit performing at least graphics and media instructions, to ~~produce~~ render at least graphics and media data; and

(d) an enhanced texture cache in communication with the first vector functional unit, the first vector functional unit obtaining from said enhanced texture cache a vector of at least one partition of the variable length multimedia data, wherein said enhanced texture cache is not limited to storage of one type of multimedia data, but instead, is configured to stored multiple partitions that are of differing lengths, to enable storage of the different types of multimedia data.

2. (Previously Canceled)

3. (Currently Amended) The programmable graphics pipeline of Claim 1, further comprising a memory and an output buffer, wherein the enhanced texture cache comprises:

(a) a line buffer that provides multiple read ports for accessing the multimedia data in multiple partitions of differing lengths; and

(b) a cache area in communication with the line buffer, said cache area storing the multimedia data received from the memory and the output buffer.

4. (Original) The programmable graphics pipeline of Claim 3, further comprising an enhanced texture address unit in communication with the enhanced texture cache, said enhanced texture address unit being employed for converting multiple inverse-mapped source coordinates into absolute memory addresses of the multimedia data in an arbitrary-sized block.

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5. (Original) The programmable graphics pipeline of Claim 4, wherein the enhanced texture address unit further generates filter coefficients for the multiple inverse-mapped source coordinates for one of a bilinear filtering and a trilinear filtering of the data.

6. (Original) The programmable graphics pipeline of Claim 4, further comprising an enhanced rasterization unit in communication with the enhanced texture address unit, said enhanced rasterization unit being employed for generating:

(a) a plurality of destination coordinates for at least one of:

(i) a plurality of primitives being rendered; and

(ii) a media processing output; and

(b) a plurality of source coordinates for at least one of:

(i) texture data associated with the plurality of destination coordinates for the plurality of primitives; and

(ii) media data associated with the plurality of destination coordinates for the media processing.

7. (Original) The programmable graphics pipeline of Claim 6, wherein the plurality of primitives include at least one of:

(a) dots;

(b) lines;

(c) triangles;

(d) rectangles; and

(e) polygons.

8. (Original) The programmable graphics pipeline of Claim 6, further comprising an enhanced Z-buffer unit in communication with the enhanced rasterization unit and the enhanced texture address unit, said enhanced Z-buffer unit being employed for loading source coordinates of a primitive being rendered to provide the enhanced texture address unit with variable access to the source coordinates if perspective address generation cannot be used.

9. (Original) The programmable graphics pipeline of Claim 8, wherein the enhanced Z-buffer unit is further employed for determining a depth of a new source pixel in relation to an old source pixel.

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10. (Original) The programmable graphics pipeline of Claim 1, further comprising a blending unit that is in communication with the first vector functional unit, said blending unit being employed for:

(a) combining a graphics data output from the first vector functional unit with a color value to produce a blended value; and

(b) combining the blended value with a destination pixel value.

11. (Original) The programmable graphics pipeline of Claim 1, further comprising an output buffer in communication with the first vector functional unit, said output buffer being employed for concatenating one of successive image outputs and successive video outputs from the first vector functional unit, to reduce a number of subsequent write transactions to a memory.

12. (Previously Presented) The programmable graphics pipeline of Claim 1, further comprising an output buffer in communication with the first vector functional unit and the enhanced texture cache, said output buffer being employed for:

(a) concatenating successive media processing output from the first vector functional unit to produce concatenated data;

(b) providing the concatenated data as input to the enhanced texture cache; and

(c) converting a compressed format of destination coordinates into a plurality of destination addresses for media processing output data.

13. (Original) The programmable graphics pipeline of Claim 10, further comprising a write buffer in communication with the blending unit, said write buffer sending multiple write transactions to a memory, to reduce page misses.

14. (Original) The programmable graphics pipeline of Claim 11, further comprising a write buffer in communication with the output buffer, said write buffer sending multiple write transactions to a memory, to reduce page misses.

15. (Original) The programmable graphics pipeline of Claim 1, further comprising a configuration register in communication with the first vector functional unit, said configuration register providing the first vector functional unit with partitioned data access parameters and a location of a current instruction thereby instructing the vector functional unit to perform one of a graphics process and a media process.

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16. (Original) The programmable graphics pipeline of Claim 1, further comprising:

(a) a second vector functional unit in communication with the instruction cache and performing the graphics and media instructions being performed by the first vector functional unit, to produce parallel graphics and media data; and

(b) a second register file in communication with the second vector functional unit, said second register file storing additional multimedia data and additional intermediate data.

Claims 17 – 30 (Currently Canceled)

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